

# Notes on Remote Control

Simon Bahr 2022

*Remote Control* is an invitation for the pianist Moena Katsufuji to switch back and forth between playing and listening: All 49 keys of a midi-keyboard trigger sounds, projected by a midi-piano and a loudspeaker. In different parts of the piece, these mini-compositions are used as note-like musical events or are simply listened to one by one. In the latter case, the performer becomes a listener and uses the midi-keyboard as a “remote control”, with which she can switch the “channel” by moving on to the next note after a freely definable period of time.

The piece was premiered on February 2, 2022 at Folkwang University in Essen-Werden, Germany. A *pure data*-patch for triggering the audio and midi samples is available.<sup>1</sup> An 88-key midi-keyboard (*doepfer*) and a midi-controllable grand piano (*Yamaha Disklavier*) were used. Utilizing a midi-keyboard with more than 49 keys can make sense, because many small keyboards often do not have weighted keys. On the other hand, the performance benefits – in my view – from a “David versus Goliath” situation, which emerges when using the smallest possible keyboard.

In very few aspects, the score goes beyond the actions required for producing sound: The first written note triggers a sound half a second after being pressed, which means that the first short attacks have no acoustic consequence - apart from the noise of the keys being struck. This creates the impression of a situation that unfortunately often occurs when using electronics in a performance: The setup that worked during rehearsal suddenly stops working.<sup>2</sup> Later in the piece, this key is struck again (with an explicitly exaggerated gesture and *fff*) and held longer, so that finally a sound is triggered. This example is supposed to open up a performative space for the player: Performative actions are not explicitly required, but deliberately left up to her. Depending on her preference, further theatrical or mimic elements may be added, but not adding any is an absolutely legitimate option as well.

The player has only 49 keys, i.e. 49 possible piano-plus-soundfile-events at her disposal. That are not very many: On a piano, a very wide range of pieces and styles can be played using only 49 keys, but the individual tones of a piano have a relatively similar

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1 <https://puredata.info/>

The audio and midi samples may be triggered using any software. It is only important to ensure that audio and midi are dynamically adjusted to the input velocity, using filtering for audio and velocity scaling for midi.

2 This was actually the case in the premiere: The midi connection to the piano was interrupted and the piece could only begin with some delay. The audience reacted with relieved laughter when realizing that the error, which as they believed still hadn't been corrected, was now a part of the performance and the piece had already begun.

sonic quality as well as dynamic envelope and range. They differ primarily by their pitch. The individual event is primarily identified relatively – by its intervallic relationship to other events occurring at the same time or beforehand. With 49 samples on the other hand, that is, 49 exactly repeatable sonic events<sup>3</sup> with a more or less unique individual fingerprint, the identification of the event is absolute. In addition, the assignment of one audio sample to one midi sample remains the same during the entire piece. In order to compose a multi-layered and little redundant piece of music within this framework, certain strategies were applied.

Generally speaking, the duration of a note determines its location between being an individual tone or a complex event: Almost all keys trigger the tone – on the grand piano or in the soundfile and possibly among other tones - which belongs to that respective key on a normal keyboard. With short note values, playing on the keyboard is kind of similar to playing directly on the grand piano. When a tone is held for longer, the identity of the pre-produced sample becomes increasingly manifest.

An example: In order to avoid the impression of a simple mapping between soundfile and midifile - and thus to control the listeners expectations right at the beginning - the rhythm notated in bar 3 is assigned to middle C on the keyboard as a midi sample. It can now be played in two different ways: either by playing the rhythm (bar 3), or by holding down the key (bar 4). In the first case, the associated audio sample is re-triggered with each attack on the grand piano. The audio sample and the tone on the grand piano are synchronized. In the second case, the audio sample simply continues to play parallel to the rhythm on the piano. This gives us the impression right at the beginning that the events coming from the grand piano and the loudspeaker could be controlled independently of each other, although this is actually not the case.

In addition to this general principle, other factors contribute to the formation of variations: (1) Different forms of superimposition of mini-compositions<sup>4</sup> lead to new sonic results. (2) Also, the individual keys of the keyboard are each assigned to one of four scales, which is each emphasized in one respective part of the piece. As a result, the sonic material is gradually revealed. (3) In addition, sounds of different origins are associated with the scales, which when combined are intended to create a landscape of electronic sounds that is as diverse as possible, but at the same time coherent.

For example, the idea of the grand piano as a “consumer device” controlled by a “remote control” is supported by typical media sounds: short sequences of soundtracks from films, from the broadcast of a football game, from other music of different genres, etc. In contrast to this – and yet connected to the subject of media and technology sounds – raw analog synthesis sounds, noise and interference, sine tones, synthetic voices and instrumental sounds are used – the latter constituting in a continuum with the already

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3 The only variance per key is a filter for the audio sample and a scaler for the velocity value of the midi sample, depending on the velocity output of the midi-keyboard.

4 e.g. chords, sustained tones accompanying melody, polyphonic playing.

mentioned samples of different kinds of music.

The musical material projected by the grand piano is based on existing music as well as on audio-to-midi conversions of the corresponding audio samples. In the first case, a reference is made to the audio samples on a conceptual level – they too are reminiscent of existing styles of music. In the second case, similarities between what is happening on the piano and on the loudspeaker arise on a formal level, since the derivation of the midifiles from the audiofiles creates rhythmic synchronization points and harmonic similarities.

In addition to the player's freedom to shape the performative level – as described at the beginning –, she also has a significant influence on some musical aspects of the piece. Rhythmically unspecified sequences of pitches occur several times in the score, marked with the instruction “ad lib. (hold notes max. until silence)”. Here it is up to the player to decide, which of the pre-produced mini-compositions she will play fully, in parts or hardly at all. She may improvise the durations or prepare a version that suits her preferences. Many parts of the pre-produced mini-compositions do not appear at all in most performances. This emphasizes the role of the performer as co-composer. It also makes the duration of the piece relatively variable.<sup>5</sup>

With *Remote Control* I have tried to realize various ideas that are important to me in my compositional work: Within an electronic setup that is as simple and limited as possible, an attempt is made to create a musical experience that is as rich and varied as possible. The electronic sounds are connected on a conceptual level, but at the same time remain very diverse on a sonic level. There is a continuum between electronic sounds and the acoustic sound of the grand piano, which transitions from (1) sounds actually played on the keyboard to (2) sounds theoretically playable to (3) clearly mechanical sounds to (4) electronic sounds. On the one hand, the performer is provided with clearly formulated instructions and ideas, but on the other hand she also has a musical and performative open space at her disposal, which she may use to give the piece her own fingerprint.

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5 The piece lasts at least 10 minutes in the complete version, but in extreme cases it could last up to 20 minutes. There is also an approx. 8-minute short version.